

## Abstract

Narrowband interference can seriously degrade the overall  
5 performance of a communications network without significantly damaging a  
large percentage of the communications network's transmissions. In a  
single tone communications network, narrowband interference can reduce  
the overall signal-to-noise ratio to a level such that a receiver can no longer  
accurately decode the received transmission. However, the receiver's filters  
10 and equalizers often can filter out the effects of the narrowband interference  
and the receiver can accurately decode the received transmission if the  
receiver can restart the decoding at the point when the narrowband  
interference began interfering with the transmission. A technique using  
sequential decoding with backtracking and adaptive equalization permits the  
15 receiver to adapt to the presence of the narrowband interference and  
backtrack the decoding to a point prior to the interference.